



BENCHMARKS

The University of North Texas Computing Center Newsletter

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Instructional

Technology

inside this
issue . . .

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

Instructional technology is many things to many people. Ask five different people for a definition and you are likely to come up with five different definitions. At the heart of those definitions, however, will be the basic concept of applying technology — any technology — to the educational process. The purpose of this application is to improve the quality of education and increase learning opportunities.

In the 1950s, radio was widely used to deliver basic education to remote areas. Today, TVs and VCRs are widely used to enhance the classroom experience. In fact, Texas has the distinction of being the first state in the Union to legislate that videodisk-based materials can be used in place of a traditional textbook. Optical Data Corporation's "Windows on Science" videodisk, supporting curriculum, and teacher materials for elementary science (1st-6th grade) has been adopted by at least 65% (1,200) of Texas schools.

Computers and related information and communication technologies are having a tremendous impact on the educational process, both inside and outside the classroom. Multimedia, Interactive Videodisk, CAI, CBT, CD-ROM, Hypermedia — the list of technological enhancements available to educators goes on and on. This issue of *Benchmarks* focuses on instructional technology in general and an important component of instructional technology — multimedia — specifically. A future issue of *Benchmarks* (we hope May) will highlight how some of these technologies are being used on the UNT campus. If you or someone you know is actively involved in the use of instructional technology here on campus, let us know. We'd like to showcase as many individuals and departments as possible.

Multimedia: Its time has come

Multimedia combines text, sound, graphics, animation, still images, and video for computer-generated presentations. It is being heralded as the next revolution in computing, supplanting the GUI (see the February 1992 issue of *Benchmarks*) as the most popular human-computer interface at the microcomputer level. Ed Juge, director of market planning for Tandy Corp., has been quoted as saying "By 1994,

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☆ UNT COMPUTING CENTER ORGANIZATION AND FACILITIES ☆

The UNT Computing Center is located in the Information Sciences Building (ISB), Room 119. Phone: (817) 565-2324, unless otherwise noted. It is divided into the following areas:

☐ **Academic Computing Services:**

- Documentation Services
- ISB 110 General Access Lab (817) 565-3048
- Mainframe User Services
- Statistical Services
- VAX/UNIX Systems (817) 565-4161

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- Network Systems Support

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- General Data Systems
- NT/TCOM Fiscal Data Systems
- NT/TCOM Payroll/Personnel
- Student Records
- Student Services
- Voice Response Applications

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- IBM Operating Systems Software Support
- Computer Operations
- Production Services



CONNECTING TO UNT COMPUTERS



Phone numbers for accessing UNT computing systems:

300 - 2400 BAUD: (817) 565-3300

300 / 1200 BAUD: (817) 565-3499

300 - 9600 BAUD: (817) 565-3461

300 - 2400 BAUD: D / FW METRO 792-4140

Area code 214 must dial 817 before the METRO #.

Set Data Bits to 7, Parity to S, and Stop Bits to 1. When dialing in, the autobaud feature requires you to hit the <RETURN> key repeatedly after the connection is made so that the receiving modem can determine the baud rate. When you see the prompt (# for local numbers, UNTMODEMS> for the metro lines) you can enter one of the following commands to connect with the system of your choice.

SYSTEM	SYTEK/DENTON LINES (#)	METRO LINES (UNTMODEMS>)	INTERNET (CUTCP, NCSA)
<i>ACS Host Systems</i>			
MUSIC/SP (line editing & PCWS)	CALL 8040	N/A	N/A
Academic Mainframe (MUSIC, CMS, Academic COM-LETE)	CALL 3270	CONNECT VM3270	tn3270 vm.acs.unt.edu —OR— telnet vm3270.acs.unt.edu
VAX (VMS)	CALL DEC	CONNECT DEC	telnet vaxb.acs.unt.edu
Solbourne (UNIX)	CALL 900	CONNECT SOL	telnet sol.acs.unt.edu
<i>Departmental Systems</i>			
Computer Sciences Sequent (Ponder)	CALL 780	CONNECT PONDER	telnet ponder.csci.unt.edu
UNT Libraries' on-line card catalog	CALL 3000	CONNECT LIBRARY	telnet library.unt.edu

To exit from the local phone lines, press <ESCAPE><RETURN>, and type DONE (at the # prompt), then press <RETURN><RETURN>. To exit from the metro lines, press <CTRL-SHIFT-6>, then type DISCONNECT (at the UNTMODEMS> prompt), then press <RETURN>. Exiting from telnet and TN3270 is dependent upon the package. CUTCP uses <ALT-X>.

HOURS FOR UNIVERSITY OF NORTH TEXAS COMPUTER ACCESS AREAS : Spring 1992

Day of Week	Willis Library Lab	ACS Lab (ISB 110)	Other General Access Labs:	General Access Lab Locations:
Monday - Thursday	Open 24 hours a day	7:30 a.m. to Midnight	8 a.m. to 10 p.m.	☆ BA: 330, 332 ☆ Chilton Hall: 255, 116 [Adaptive Lab] ☆ GAB: 330, 550 ☆ ISB: 110, 205A ☆ Matthews: 309 ☆ Willis: 134 ☆ Wooten: 120
Friday	Open 24 hours	7:30 a.m. to 9 p.m.	8 a.m. to 5 p.m.	
Saturday	Open 24 hours	9 a.m. to 9 p.m.	10 a.m. to 5 p.m.	
Sunday	Open 24 hours	1 p.m. to Midnight	1 p.m. to 10 p.m.	

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trying to buy a computer without basic multimedia capabilities will be like trying to buy a car in Texas with no air conditioning."¹

Multimedia mini-revolutions are already occurring in education and business. Multimedia applications make it possible to tailor the presentation of information to meet the needs of a particular audience or even a single individual. Through the use of color, motion and sound, multimedia presentations capture and hold the attention of an audience. This permits a more efficient and effective transfer of information.

Multimedia Instruction

According to Reisman and Carr (see references), the technology behind multimedia instruction is the hybridization of the microcomputer and the video disk player.² It is the natural outgrowth of individualized instruction that has been evolving for the past 40 years. The evolution of individualized instruction can be traced as follows:

- **Self-study** — Closest in form to the textbook, printed materials are divided into chapters, with a set of questions and/or problems at the end of each chapter. Recommended answers are usually included with the materials.
- **Programmed instruction (PI)** — Usually delivered through printed text, programmed instruction is highly structured. It requires frequent responses from the student, who is given immediate feedback.

- **Computer-assisted Instruction (CAI)** — Starting in the 1960s, behavioristic programmed instructions were developed and adapted for the computer. CAI is usually delivered to the student via the display screen. Input to the program by the student is via a keyboard, with the analysis of responses performed by the CAI program.
- **Computer-managed instruction (CMI)** — An extension of CAI, CMI provided the link between CAI and multimedia instruction. The idea behind CMI is that computers should be used for what they are really good at: analyzing large quantities of data. Thus, with CMI, students would take criterion tests on a computer and then be sent to engage in other learning activities (watch a film, hear an audio tape) based on the computer's analysis of their test results.

The transition from CAI to CMI to multimedia, according to Reisman and Carr, is characterized by the following:

- Increased use of pictorial and audio material.
- Compaction of the "system."
- Integration of instruction with other applications.
- Increased learner control.
- Use of the touch-sensitive screen for input.
- Increased use of simulation and problem-solving modes.
- Authoring and presentation systems as media managers.

In 1991, the two biggest purchasing trends in the K-12 educational market involved investment in multimedia systems and increased software acquisition. Despite this trend, multimedia instruction in the classroom is still not as widespread as might be expected. Reisman and Carr attribute this to the attitudes of the groups providing and receiving the education. They suggest

the establishment of "learning centers" to serve as transition points between traditional instruction and individualized instruction in the home or office. "In other words, before we can free the learner from the limitations of time and place (the goal of Sidney L. Pressey, inventor of the original teaching machine), we may have to settle for just freeing the learner from the limitations of time. In order to achieve full integration into educational curricula, multimedia courses may also have to be perceived as unequivocally superior to their traditional-instruction counterparts."³ We just may be on the verge of accomplishing this.

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¹ "Multimedia to be Cornerstone of Tomorrow's PC; Monitors and RAM to Grow, Drives to Shrink," by Robert L. Scheier, *PC Week* (October 21, 1991, v.8 n.42 p.32).

² Some common synonyms for multimedia instruction are interactive video, computer-based interactive video, and Level III interactive video.

³ "Perspectives on Multimedia Systems in Education," by Reisman & Carr, *IBM Systems Journal* (Sept. 1991, p.295). ■

Multimedia Micros

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

This year could very well be the year of the multimedia micro-computer. Apple and IBM, with FTC approval, have formed two new companies called Taligent and Kalieda. Taligent will develop advanced operating systems and Kalieda will develop a platform-independent multimedia software architecture. They have also joined the Interactive Multimedia Association (IMA). The IMA and the Multimedia PC Marketing Council (MPC) are separately in the process of developing and promoting multimedia hardware and software. Currently, the Multimedia PC Marketing Council has garnered considerably more attention in the trade press.

The Multimedia PC Marketing Council

The Multimedia PC Marketing Council, an umbrella organization of Microsoft Corp., has established a multimedia-products standard. Products that conform to the standard are identified by the Multimedia PC logo (MPC). The MPC standard is based on a minimum specification for CD-ROM performance, sound capabilities and display graphics. It is designed to run applications written for Microsoft Windows with Multimedia Extensions.

The Multimedia PC Marketing Council is made up of one software vendor, Microsoft, and ten hardware vendors: AT&T Computer Systems, Compu Add Corp., Creative Labs Inc., Media Vision, NEC Technologies, Olivetti,

Please see MULTIMEDIA on page 5.

Six MPC Upgrade Kits

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

Last December, *PC Magazine* showcased six upgrade kits you can purchase to make your PC MPC compliant. They are as follows:

- ① **CompuAdd Co.**, 12303 Technology Blvd., Austin, TX 78727 (512) 250-2489 — This Multimedia Upgrade Kit comes bundled with CompuAdd's Multimedia upgrade audio board, a Sony CD-ROM drive, Microsoft Windows 3.0 with Multimedia Extensions 1.0 and CompuAdd's Rack Manager. Cost: \$ 1,069 with an internal CD-ROM, \$1,295 with an external CD-ROM drive. Additional hardware available includes a TV/Video Board that integrates audio and full-motion digitized video with the PC (\$525) and a AM/FM Tuner Board with an infrared remote control (\$299).
- ② **Creative Labs Inc.**, 2050 Duane Ave., Santa Clara, CA 95054 (408) 986-1416 — This Multimedia Upgrade Kit comes with a Creative Labs SoundBlaster Pro audio card, a Matsushita Panasonic CD-ROM drive, Microsoft Windows 3.0 with Multimedia Extensions 1.0, Microsoft Bookshelf, Prosonus and Creative Labs' "Creative Sounds" CD-ROM, Selectware Co.'s Selectware System, and Sierra On-Line's "Jones in the Fast Lane" video game. Creative Labs also added 200 music titles to the Windows CD. Cost: \$849.95 with an internal CD-ROM drive, \$949.95 with an external CD-ROM drive.
- ③ **Media Vision Inc.**, 47221 Fremont Blvd., Fremont, CA 94538 (415) 770-8600 — This Multimedia Upgrade Kit comes with Media Vision's Pro Audio Spectrum sound board, an internal Sony CD-ROM drive, Microsoft Windows 3.0 with Multimedia Extensions 1.0, Compton's Multimedia Encyclopedia, and Sierra On-Line's "Jones in the Fast Lane" video game. Cost: \$995.
- ④ **Tandy Corp.**, 1800 One Tandy Center, Fort Worth, TX 76102 (817) 390-3011 — This Multimedia Upgrade Kit includes a Tandy 16-bit audio board, a Tandy CDR-1000 CD-ROM drive, and Microsoft Windows 3.0 with Multimedia Extensions 1.0. Cost: \$799.95 with an internal CD-ROM drive, \$899.95 with an external CD-ROM drive.
- ⑤ **Video Seven**, 46221 Landing Parkway, Fremont, CA 94583 (510) 623-7857 — This Multimedia Upgrade Kit includes Microsoft Windows 3.0 with Multimedia Extensions 1.0 and Texel America's CD-ROM drive. Cost: \$749 with an internal CD-ROM drive, \$899 with an external CD-ROM drive. An add-in card which will upgrade audio capabilities to full digital stereo sound is also available. It is called Media FX and costs \$349.
- ⑥ **Dolch**, 372 Turquoise St., Milpitas, CA 95035 (800) 538-7506 (408) 957-6575 — This Multimedia Upgrade Kit enables its entire line of computers to meet MPC standards. The kit includes Creative Labs' SoundBlaster Pro audio card, Dolch's PC Video card, a Sony CD-ROM drive, and Microsoft Windows 3.0 with Multimedia Extensions 1.0. Cost: \$3,995.

Reference

Albano, Tim "Multimedia Upgrade Kits" *PC Magazine* (December 17, 1991, v.10 n.21 p.44). ■

MULTIMEDIA continued from page 4.

Phillips Consumer Electronics Co., Tandy Corp., Video Seven, and Zenith Data systems.

Each member company has a seat on the board of directors. The MPC Marketing Council is a subsidiary of Software Publishers Association, so it is also on the board of directors. System manufacturers can become council members with full licensing privileges of the MPC trademark for a onetime fee of \$250,000. Upgrade kit manufacturers can join the MPC council for \$100,000. It is also possible for manufacturers to license the MPC trademark on a per system basis — a cheaper way to go in many cases.

Independent software vendors (non-Microsoft) can license the logo for \$500 per product. For their \$500, the vendors get to display the MPC trademark on their product. This means that their software will run on the baseline hardware platform outlined by the MPC Council, is 100% compatible with Microsoft Windows Multimedia Extensions Version 1.0, and uses at least one "multimedia" element of the Windows Multimedia Extensions: MIDI, wavefore, CD audio, or animation.

The MPC logo can be found on three types of products: PCs, upgrade kits, and software packages. The MPC logo is a trademark, not a certification. It offers you the assurance of buying into a family of products that share Microsoft's vision of a multimedia standard.

The MPC Council is committed to promoting multimedia. To that end, it sponsors multimedia events such as "product launches," places ads, and distributes a titles catalog and sampler disk with MPC-compatible applications. The ultimate goal of the Council is to make MPC products so pervasive that an MPC section will be added to neighborhood software stores.

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Apple Education TV Series

- April 16 — "Multimedia in Language and Literacy" Noon to 1 p.m. in Chilton Hall 111 or on UNT Channel 11.

An MPC Software Sampler

By Claudia Lynch, *Benchmarks* Editor
(BITNET: AS04@UNTV.M1)

If you're wondering about what MPC software might look like, the software highlighted by *PC Magazine* last year might give you a hint. A complete catalog of MPC software (around 60 titles) is available from the Multimedia PC Marketing Council, 1730 M St. NW, Washington, D.C. 20036.

All MPC software comes on a CD-ROM with the MPC logo. Following is a sample of available titles:

- **IconAuthor** (AmiTech Corp. 800-289-2884, 603-883-0220) — \$4,995. A full-blown authoring system for non-programmers. Gives you the ability to combine text, graphics, full-motion video, animation, digital audio files, and external applications and link elements to icons to create presentations.
- **MediaSource** (Applied Optical Media Corp. 215-429-3701) — \$395 each. Ten CD-ROM libraries on topics from aerospace to medicine. Each library has 1,500 images and 90 minutes of music and sound effects. A search engine helps find the right material to integrate into multimedia presentations.
- **Multimedia Explorer** (Autodesk Inc. 800-525-2763, 415-491-8304) — \$199. A collection of animated clips, digitized audio, and MIDI clips can be used to produce 256-color 2-D animations with the Autodesk Animator module. Autodesk's Animation Player for Windows lets you play back animations in real time.

- **Multimedia ToolBook Integrated** (Asymetrix Corp. 800-634-8999, 206-637-1500) — \$695. A hypercardlike environment that provides a high-level construction kit for Windows applications. CD-ROMs, laserdisk players, animation software, waveform audio cards, overlay video boards, and MIDI sequences are supported. Multimedia applications are created by copying and pasting, using 250 predefined multimedia "widgets."
- **Compton's Multimedia Encyclopedia for Windows** (Compton's New Media 800-533-0130) — \$895. A 26-volume encyclopedia for the family, enhanced with 45 animated sequences, 15,000 images, and 60 minutes of music and sound.
- **Great Cities of the World: For business and armchair travelers** (InterOptica Hong Kong 011-852-824-2868) — High-quality slide shows, tours of local history, culture and restaurants for 10 different cities throughout the world. Real voice teaches useful phrases in native languages.
- **Learn to Speak Spanish: Teach yourself Spanish in 30 lessons** (The HyperGlot Software Co. 615-558-8270) — Digitized voices of native speakers help with conversation skills. You can work on your accent by recording and playing back your voice. Interactive drills in comprehension and grammar help you test your progress.
- **Microsoft Bookshelf for Windows** (Microsoft Corp. 800-426-9400) — \$195. A fully indexed collection of reference books that incorporates animation, sound, graphics and hypertext. The reference books are: The Concise Columbia Encyclopedia, The American Heritage Dictionary, Roget's II Electronic Thesaurus, The World Almanac and Book of Facts, 1991, Bartlett's Familiar Quotations, The Concise Columbia Dictionary of Quotations, and Hammond Atlas.

- **AmandaStories** (The Voyager Co. 800-446-2001, 213-451-1381) — \$59.95. Allows children 3 and over to create different stories about an adventurous camel and cat by pointing and clicking, no reading required. Colorful animation, music, and sound effects.
- **Living Books** (Broderbund Software 415-492-3200) — \$49.95 each. Animated storybooks for children 3-10 with digitized soundtracks of talking characters, music, and sound effects. Stories are read aloud in English, Spanish, or Japanese. Children can play and learn inside the story by clicking on individual words, characters, and scenery.
- **Multimedia Beethoven** (Microsoft Corp. 800-426-9400) — \$79.95. You can listen to the Vienna Philharmonic perform The Ninth Symphony while following the score and hearing commentary on the composer and composition.
- **Master Trax Pro** (Passport Designs Inc. 415-726-0280) — \$395. A MIDI sequencer made expressly for multimedia producers and musicians. You can record and playback soundtracks, arrange compositions, and synchronize with SMPTE and MIDI time code.

References

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So You Want a Multimedia PC

By Claudia Lynch, *Benchmarks* Editor
(BITNET: AS04@UNTVMI)

You've been waiting for the right time to buy a PC. You've saved up your money, the time seems right and you think "Why not a multimedia PC, after all the multimedia revolution is coming — I read it in *Benchmarks*." Now what?

Tandy Corp. (1800 One Tandy Center, Fort Worth, TX 76102 (817) 390-3011) has a booklet entitled "Multimedia, More Than You Imagined" that might give you some ideas. You can even buy a full MPC system from Tandy (as well as other hardware vendors). If you want to "build your own" system, however, here's a tip: **More is Better**. Get as much as you can afford, for example: a 150 MB hard disk, 4-8 MBs RAM, and at least a 386 CPU.

Then there is the specialized hardware. You will need a CD-ROM drive. It must have an internal look-ahead buffer to achieve a continuous transfer rate of 150K per second. It must also have an audio output for playing music CDs.

Next, you will need hardware to sample and digitize audio input through a microphone and to play it back. Microsoft calls this "waveform audio."

Then, of course, is the MIDI board to synthesize music. It must be capable of three simultaneous voices with six-note polyphony each and a percussion channel with five-note polyphony. It must also include MIDI Out and MIDI In ports.

The audio outputs from the waveform hardware, the MIDI hardware, and the CD-ROM must be mixed together and fed to an amplifier and speakers or self-amplified speakers. You will also need a joystick port for two joysticks.

You can purchase Creative Labs' Sound Blaster card (see "Six MPC Up-

grade Kits" on page 4 for more information) with the optional MIDI Connector box installed to satisfy the waveform, MIDI, and joystick requirements.

References

Petzold, Charles "Beyond the Beep: the Coming of Multimedia Windows" *PC Magazine* (October 29, 1991 v.10 n.18 pp. 403-407).

Rohrbough, Linda "What does it Take to Make a PC a Multimedia PC?" *Newsbytes* (November 15, 1991). ■

Multimedia Over the Phone

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

Asymmetrical digital subscriber line (ADSL) technology makes it possible to transmit data and full motion videos on the same lines that customers use for "voice" telephone calls. Bell Atlantic Corp. and AT&T have combined resources to test the use of the ADSL technology with New Jersey public schools. During the 1992-1993, 1993-1994 school years, teachers, students and parents, will be able to access information and videos stored in multimedia libraries and large-scale computer databases from their classrooms and homes. For example, a student could use a personal computer to search databases about 30s and 40s music. She could call-up a biography of Benny Goodman and hear a sampling of Goodman's classic hits in FM radio broadcast quality.

According to the chairman and chief executive officer of Bell Atlantic, Raymond W. Smith, the goal of the project is to enrich the educational experience through innovative technologies. It will

also serve as a stimulus for other information age services that the companies envision regional Bell operating companies providing. Some of those services might be home health care monitoring, entertainment, and home energy and security management.

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Rohrbough, Linda "What Does it Take to Make a PC a Multimedia PC?" *Newsbytes* (November 15, 1991) ■

The University of the Future

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

If you are wondering what education will be like in the 21st century, you will be interested in California State University (CSU), San Marcos. It is the first university under construction in the United States in nearly two decades, and is the first public university built from the ground up in California in 25 years. A business agreement made with Northern Telecom and Pacific Bell in September 1991 will allow the University to become a model educational community of the 21st century. The agreement with Pacific Bell and Northern Telecom allows for the implementation of an Advanced Telecommunications Platform (ATP) for creating new telecommunications applications for higher education.

Pacific Bell has a plan called "Knowledge Network" which proposes to link California's educational system through the public switched telephone network. According to Jim Cameron, Northern Telecom's vice president for the Pacific Region, "the ATP, using Pacific Bell's public network and Northern Telecom's Fiber World family of products, will create the infrastructure required for the campus of the 21st century as well as for the hub of the community."

The Advanced Telecommunications Platform

The ATP will be a test-bed for applied research and studies aimed at furthering the innovation and development of educational applications using the advanced technologies. It will connect Northern Telecom's newest central office switching system (an S/DMS SuperNode) to the CSU San Marcos campus along with several optic S/DMS AccessNode. These nodes will make it possible to connect the university to local public libraries and community colleges. Advanced voice, data, and video capabilities will be provided by the S/DMS SuperNode network.

Potential innovations made possible by the ATP include distance learning using two-way interactive video; electronic study groups comprised of students from around the world; simultaneous computer access to images, sound, and text; and voice-to-text and text-to-voice translations.

Commitments of Project Members

Following are some of the commitments made by the ATP project members (CSU San Marcos, Pacific Bell and Northern Telecom):

- The project members will work together to develop a 10-year technology plan incorporating the campus application requirements and available technology.

- Pacific Bell and Northern Telecom will provide staff support to assist CSU San Marcos in developing telecommunications criteria.
- The project members will jointly develop internship programs to provide technology transfer information exchange between industry and the academic environment.
- Pacific Bell and Northern Telecom will provide a research project team to assist CSU San Marcos in developing applications that can be tested, evaluated, and deployed in the education market.
- The project members will conduct an interactive fiber video trial.
- CSU San Marcos will use Pacific Bell's voice mail.
- Pacific Bell will be the service provider for an automated touch-tone registration system at CSU San Marcos.

The Campus of the 21st Century

CSU San Marcos opened its doors in the fall of 1990 in temporary facilities. In the fall of 1992, the University will move to its permanent site in North County, San Diego. At first, CSU San Marcos will offer traditional academic programs, focusing on an international curriculum. With the passing of each year, the campus of the 21st century will come closer to becoming a reality.

References

"U of the future: CSU San Marcos, Northern Telecom & Pacific Bell team up" *EDGE :on & about AT&T* (September 30, 1991 v.6 n.116 p.17). ■

The Network Connection



By Dr. Philip Baczewski, Acting Director of Academic Computing,
BITNET INFOREP (BITNET: AC12@UNTVM1)

*This column is a continuing feature of **Benchmarks** intended to present news and information on various aspects of wide area networks.*

Electronic Discussion Lists and the Scholar

I recently received the Winter 1992 issue of a newsletter called *REACH, Research & Educational Applications of Computers in the Humanities*, published by the Humanities Computing Facility of the University of California at Santa Barbara. In scanning this publication, I found it to be reinforcement for the fact that the use of Wide Area Networks is affecting the accomplishment of scholarship in many fields. In this one issue alone are announcements of electronic mailing lists on topics including Buddhist studies, Hermann Hesse, German history, modern British literature, French studies, Arabic language and literature, Spanish and Portuguese history, and Chinese poems. The eight lists discussed in this eight-page newsletter are just the tip of a much larger iceberg. The number and variety of scholarly on-line discussion lists has grown with geometric proportions. (*Reach* can be received electronically by sending the command **SUB REACH your name** to **LISTSERV@UCSBVM**.)

If these eight are the tip of the iceberg, then how do you find the iceberg? That question may have a number of answers. For many years, the file **LISTSERV GROUPS** was the primary source for BITNET mailing list information, however, the number of lists has out-paced this file's maintenance. Several other sources have taken this file's place, however. One way to find out what lists are maintained on BITNET **LISTSERV**s is to send the command **LIST GLOBAL** to the nearest **LISTSERV** installation (in UNT's case, **LISTSERV@UTDALLAS**). One word of warning, however: this command will generate and send to you a file which is over 3000 lines long. The lists are in alphabetical order, so if you are looking for the location of a list, this file can be very helpful. If, however, you are looking for mailing lists on your particular field of study, it could take a while to scan over 3000 entries. (A relatively recent version of this listing is maintained on CMS at UNT in the file **LISTSERV LISTS D**).

Fortunately, there is an alternative source for BITNET (as well as Internet) mailing lists and discussion groups. Diane Kovacs, of the Kent State University Libraries, has compiled a directory of electronic mailing lists and news groups and has recently released a fourth revision. The directory is actually a set of files which can be acquired from **LISTSERV@KENTVM** and via anonymous FTP from **KSUVXA.KENT.EDU** (in the Library directory). (These files are currently available at UNT on the CMS D disk).

The files which make up the directory are as follows:

- **ACADLIST README** (explanatory notes for the Directory with an index)
- **ACADLIST FILE1** (Anthropology-Education)
- **ACADLIST FILE2** (Futurology-Latin American Studies)

- **ACADLIST FILE3** (Library and Information Science-Music)
- **ACADLIST FILE4** (Political Science-Writing)
- **ACADLIST FILE5** (Biological sciences)
- **ACADLIST FILE6** (Physical sciences)
- **ACADLIST FILE7** (Business and General Academia)
- **ACADLIST CHANGES** (all the major additions, deletions and alterations)

The organization of lists and news groups by subject allows easy access to those on one particular field of study. This is obviously a valuable service to the Wide Area Network community of scholars.

Another similar very useful directory is one of electronic journals, compiled by Michael Strangelove at the University of Ottawa and available from LISTSERV@UOTTAWA as well as LISTSERV@BROWNVN. It consists of two files, **EJOURNAL1 DIRECTRY** and **EJOURNAL2 DIRECTRY** (also available at UNT on the D disk), with entries organized by category of publication (journal, newsletter, digest, etc.). Each entry has the journal title, ISSN number (if any), a description, subscription information, submission information, related electronic mailing lists (if any), back issue information, and a contact name and address.

There is no doubt that scholars' use of wide area networks will continue to grow. As more and more scholars are involved in using wide area networks, "scholar support personnel," i.e. librarians and academic computing professionals, are increasingly involved in enhancing the scholar's process of obtaining network resources, both in relation to access method and information content. We may be quickly approaching the day when network directories such as these are used as commonly as card catalogs are today. ■

List of the Month

Each month we will highlight one BITNET, Internet, or USENET Special Interest Group (SIG) mailing list. This month's list...

This month's list is actually two for the price of one (and what a price!). The lists below may interest those involved in applying new technologies to the process of education.

EDTECH@OHSTVMA

This E-Conference was conceived to bring together students, faculty, and "interested others" in the field of educational technology to share ideas and information.

BITNET: LISTSERV@OHSTVMA

Internet: LISTSERV%OHSTVMA.BITNET@VM1.NODAK.EDU

Coordinators:

Vickie Banks (BITNET) 21602VB@MSU

(Internet) 21602VB%MSU.BITNET@VM1.NODAK.EDU

Mark Rosenberg (BITNET) 21602MR@MSU

(Internet) 21602MR%MSU.BITNET@VM1.NODAK.EDU

Dr. Joe Byers (BITNET) 20506JLB@MSU

(Internet) 20506JLB%MSU.BITNET@VM1.NODAK.EDU

Josie Csete (BITNET) 21602JMC@MSU

(Internet) 21602JMC%MSU.BITNET@VM1.NODAK.EDU

EDUCAI-L@WVNVM

Educational Applications of Artificial Intelligence — Educational Applications of Artificial Intelligence (EDUCAI) is a forum for observation and discussion of the incorporation of AI, expert systems, knowledge engineering, intelligent databases, intelligent tutoring systems, and other applications of advanced technology, into computer-assisted "intelligent" educational design, development, and delivery.

BITNET: LISTSERV@WVNVM

Internet: LISTSERV@WVNVM.WVNET.EDU

Listowner: John T. Grasso (BITNET) U5521@WVNVM

*To subscribe to either of these lists, send the message **SUB listname yourname** to **LISTSERV@nodename** where **nodename** is the node which corresponds to the list to which you are subscribing. ■*

EDUCOM: Managing Information Technology in Higher Education

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

EDUCOM is a nonprofit consortium of higher education institutions. According to an EDUCOM brochure, it "has been leading the nation's educational community in integrating information technology into classrooms, curricula and research." EDUCOM's focus for the 1990s is on:

- ❶ increasing individual and institutional intellectual productivity through access to and use of information resources and technology.
- ❷ ensuring the creation of an information infrastructure that will meet society's needs into the twenty-first century.

EDUCOM Programs and Projects

EDUCOM sponsors a number of programs and projects that are of interest to the academic community.

- **Networking and Telecommunications Task Force (NTTF)** — NTTF helps colleges and universities identify and communicate strategic networking and telecommunications policy issues and concerns. Each spring NTTF hosts the National NET conference. NTTF can be contacted via E-Mail at (BITNET) NTTF@EDUCOM or (Internet) NTTF@EDUCOM.EDU
- **Corporation for Research and Educational Networking (CREN)** — EDUCOM operates the BITNET Network Information Center (BITNIC) and provides membership and information services for CREN. CREN is a separate nonprofit membership corporation responsible for BITNET and CSNET. You can contact BITNIC by sending E-Mail to (BITNET) INFO@BITNIC.EDUCOM or (INTERNET) INFO@BITNIC.EDUCOM.EDU
- **Coalition for Networked Information (CNI)** — CNI is a joint project of EDUCOM, CAUSE, and the Association of Research Libraries. CNI promotes the creation of and access to information resources in networked environments for the enrichment of scholarship and enhancement of intellectual productivity.
- **Higher Education Information Resources Alliance (HEIRAlliance)** — EDUCOM and CAUSE created HEIRAlliance as a vehicle for undertaking joint projects by higher education member organizations. Its purpose is to enhance the utility of information technology for educational research, administration and public service.
- **Educational Uses of Information Technology (EUIT) Program** — EUIT's purpose is to improve faculty and student access to information technology, promote its integration into the teaching/learning process, influence national development of information technology as an important educational resource, and support professional growth for a broad range of information technology professionals.

EUIT participants from both higher education and corporate communities gather annually in Snowmass, Colorado to meet, share ideas and concerns, and work toward effective, innovative solutions to the challenges of information technologies on campuses. Some of the current concerns of EUIT include:

- Making information technology a priority on campus.
- Ensuring access for students with special needs.
- Protecting the rights of users and developers of information technology.

EUIT can be contacted via E-Mail at (BITNET) EUIT@EDUCOM or (Internet) EUIT@EDUCOM.EDU

- **Corporate Associates Program (CAP)** — CAP allows member institutions and the business community to establish contact and exchange ideas through conferences, seminars, task forces and other activities. Through CAP, EDUCOM members can influence corporate product and service development and have access to the latest information on product availability. CAP can be contacted via E-Mail at (BITNET) CAP@EDUCOM or (Internet) CAP@EDUCOM.EDU
- **Publications** — EDUCOM publishes *EDUCOM Review*; the EDUCOM quarterly newsletter; *CCNEWS*; the *Using Software* brochure; and books in the EDUCOM Strategies Series on Information Technology. The *EDUCOM Review* is a magazine on computing and communications in colleges and universities; *CCNEWS* is an electronic news service for campus computing newsletter editors. More information about EDUCOM publications can be received by sending E-Mail to PUBS@EDUCOM (BITNET) or (Internet) PUBS@EDUCOM.EDU
- **Conferences and Seminars** — In addition to the National Net Conference and the EUIT Snowmass Working session, EDUCOM also sponsors an Annual Fall Conference. It is billed as the preeminent international event for anyone concerned with information technology in higher education. It provides an opportunity for policymakers, educators, and corporate and government representatives to attend general sessions and panels, technology demonstrations, and discussion groups, and to visit various college and university campuses.

The schedule for the next three Fall Conferences are as follows:

- EDUCOM '92: Baltimore, MD, October 28-31, 1992

- EDUCOM '93: Cincinnati, OH, October 17-20, 1993
- EDUCOM '94: San Antonio, TX, October 31-November 3, 1994

EDUCOM also sponsors seminars on a wide range of topics related to the integration, management, and use of information technology in higher education.

For more information about EDUCOM conferences send E-Mail to (BITNET) CONF@EDUCOM or (Internet) CONF@EDUCOM.EDU For seminar information, send E-Mail to (BITNET) SEMINAR@EDUCOM or (Internet) SEMINAR@EDUCOM.EDU

- **EDUCOM Consulting Group (ECG)** — The EDUCOM Consulting Group provides evaluation and recommendations on administrative, research and instructional uses of information technology. ECG can be contacted via E-Mail at (BITNET) ECG@EDUCOM or (Internet) ECG@EDUCOM.EDU

For more information about EDUCOM contact them at: 1112 16th Street, NW, Suite 600, Washington, DC 20036 Phone: 202-872-4200 FAX: 202-872-4318 E-Mail: (BITNET) INQUIRY@EDUCOM (Internet) INQUIRY@EDUCOM.EDU ■

Project IDEALS

Promoting an International Dimension in Education via Active Learning and Simulation

By David Crookall, Director, Project IDEALS (BITNET: CROOKALL@UA1VM)

This announcement first appeared in the October 1991 issue of Benchmarks and is being reprinted here due to its relevance to the topic of "Instructional Technology." — Ed.

Project IDEALS is a computer-assisted learning environment based on multi-site, semester-long, socially-interactive simulations. Computer technologies allow distant teams to communicate, hold real-time teleconferences, and to obtain feedback on their performance and progress. Project IDEALS is firmly based on the principles of experiential learning; it encourages students to become fully involved, motivates them to work hard, and helps them take responsibility for their own learning.

Objectives

- To develop competence and confidence in communicating with people from other cultures, and so help create international friendships.
- To give students greater knowledge and understanding of international events and issues (e.g., global environmental problems) and to provide a context for interdisciplinary studies.
- To enhance professional skills in such areas as teamwork, decision making, problem solving, leadership and negotiation, and to develop computer literacy, clear writing and critical thinking.

Structure

The central component of Project IDEALS is a large-scale simulation assisted by computers and telecommunications. Students take on the roles of high-level negotiators representing various countries at an international conference. The country teams are situated at different campuses (usually one team per campus) and communicate using computer networks and specialized simulation management software.

The ultimate goal of each simulation is for teams to negotiate an agreement related to some international situation — for example, to hammer out the text of a treaty governing the emissions of CFCs, the use of the ocean's resources, or the future of Antarctica. Scenarios may involve real or hypothetical countries.

In Project IDEALS, the experiential learning cycle is paramount, emphasizing the importance of regular and structured reflection on experience to convert it into learning, which in turn becomes the basis for further practical experience.

Computers and telecommunications

In order to participate, each site needs a minimum of one microcomputer (e.g., BBC, IBM compatible, Macintosh), a modem, a printer, a telecommunications package, and a simple word processor. Faculty and students do not need any special computer skills in order to participate. Each site will also need access to the Internet (NSFnet) telecommunications network.

The main simulation management software, called Polnet II, is situated at the University of Alabama. It allows messages to be sent to any number of other teams at other sites and for those teams to sign on at any time to retrieve those messages and to send their own. It also enables teams to participate in real-time teleconferences, in which several teams communicate in a synchronous, conversational mode. Finally, it collects feedback and research data.

Further information

For further information, please contact **David Crookall**, Director: (BITNET) crookall@ua1vm (Internet) ua1vm.ua.edu **Catherine Schreiber-Jones**, Assn. Director (BITNET) cschreib@ua1vm (Internet) ua1vm.ua.edu or Write to: Project IDEALS English/ Morgan, Box 870244 Univ. of Alabama, Tuscaloosa, AL 35487 Phone: 205-348-9494 FAX: 205-348-5298 ■

Information Resources Goals Progress Report FY '92

The "Goals of the University of North Texas for 1992 Fiscal Year" are contained in section 13.9.1 of the University Policy Manual. The following goal is a summary of the information resources goals included in the UNT Information Resources Strategic Plan.

Support Services and Information Resources

Goal:

Enhance the technological capability and productivity of the university by increasing access to modern information resources such as electronic and voice mail, video services, and distributed computing, and by achieving greater efficiency through such techniques as resource sharing, adherence to industry standards, and state-of-the-art programming.

Progress:

- **Research Computing System** — Progress continues on enhancing the scientific research computing support via upgrades and additions to the Solbourne UNIX system. Two additional RISC processors have been added to the system, doubling its CPU capacity and the memory has been tripled. It is now a very powerful scientific computer with a four processor capacity of over 15 million double precision floating point operations per second, 114 RISC MIPS, and 192 megabytes of memory. Key software products such as the IMSL scientific subroutine library and Mathematica symbolic programming and analysis package have been installed and made available to the UNT research community.
- **Instructional Computing Labs** — Eleven General Access Computing Labs are now in operation providing access to over 325 microcomputers and associated printing facilities for all UNT students. Restricted access, specialized departmental and college computing labs also continue to be enhanced.
- **Academic Mainframe** — The acquisition process has been completed on additional memory and Input/Output channel capacity for the academic mainframe. Memory and I/O channel capacity were doubled (to 64 megabytes and 32 channels) in March as a byproduct of the administrative mainframe upgrade.
- **Administrative Mainframe** — A new IBM ES 9000, model 440, administrative mainframe was installed in March, with memory and channels from the replaced mainframe going to the academic mainframe. This doubled the administrative processor speed (to 30 MIPS) and increased memory to 128 megabytes. While immediate improvements from the increased CPU power are expected, full system upgrade benefits will occur when the new operating system (IBM MVS/ESA) is implemented, which is now targeted for the Fall 92 semester.

- **Voice Response System** — A new voice response system for teleregistration and financial aid is installed and was tested in February and March. This system will increase total line capacity by 20% (to 48 lines with expansion capability to 196).

- **Library Resources** — Access to UNT, Texas, national, and international library resources are now available via the UNT campus network.

- **Electronic Communications** — Delivery has been accepted on mail, news, and name server equipment which will enhance the provision of wide area network mail and information services to the UNT campus. Phases II and III of the installation of the campus-wide fiber optics communication backbone are completed, with fiber now linking 28 buildings.

The Science Research Building is now wired and equipment installed to provide 10 million bits per second, twisted pair, Ethernet communications. Seven buildings are now equipped in this manner.

Voice mail is now available through the telecommunications office and used by several departments.

- **Efficiency** — UNT and TCOM continue to share computing resources and administrative programming teams, resulting in significant savings and benefits for both institutions. Shared academic and administrative support for mainframe operations and printing, network and microcomputer services, and in-house microcomputer maintenance also result in significant efficiencies. A de facto standards committee of the Information Resources Council has been established to build on the benefits of our current microcomputer and communications hardware and software standards. Selected administrative applications continue to be developed and implemented on distributed computing platforms. ■



Information Resources Council News

Minutes provided by Sue Harrison, Recording Secretary

Information Resources Council Members: Philip Baczewski, Computing Center (ex-officio); Dave Barker, TCOM - Physiology; Bill Buntain, Computing Center (ex-officio); Cengiz Capan, College of Business; Carolyn Cunningham, Financial Aid; Jim Curry, Micro Maintenance (ex-officio); Stephen Farish, College of Music; Paul Fisher, Computer Sciences; Frank Forney, TCOM - Academic Computing; Chuck Fuller, Business Services; Don Grose, UNT Libraries; Richard Harris, Computing Center (ex-officio); Tom Newell, Telecommunications; Don Palermo, Admissions; Sue Pierce, School of Community Services; Paul Schlieve, Computer Education & Cognitive Systems; John Todd, Political Science; Ray Vondran, Library and Information Science (Chair); Sue Harrison, Computing Center (Recording Secretary).

Tuesday, February 18, 1992

Richard Harris reported that the Strategic Planning Subcommittee had met to begin the review of the IRC charge as well as to kick off the strategic planning process. The committee plans to meet again on February 26th with a view toward coming up with changes to the IRC charge, to be submitted at the next IRC meeting. A key issue is writing a definition of the IRC and considering the concept of the IRC being not only a recommending and advisory body, but an overseeing or coordinating body, as well. In the discussion that followed it was noted that the idea of coordination as a function of the IRC should not be taken to mean control.

Richard Harris also reported that the University Planning Council had voted not to move the Computing Center to a renovated Quad II building.

Ray Vondran reported that he spoke to the Faculty Senate on Feb. 12, giving them a brief report about the status of the IRC. Interest was expressed by the faculty in receiving communications about what the IRC is doing. It was agreed that a summary of the minutes would be published in *Benchmarks* immediately following each meeting instead of waiting until the minutes are approved. This would provide more up-to-date information. It was also agreed that the minutes would be distributed electronically to all IRC members immediately after each meeting so that members would be able to correct any inaccuracies prior to printing the summary in *Benchmarks*; and that anyone who wishes to be on the mailing list for the minutes could contact the Recording Secretary who will then add them to the regular distribution of the final minutes of each meeting. Vondran urged all members to distribute minutes of IRC meetings to all interested persons in their constituencies.

Jim Curry reported that no action had been taken yet about getting him more space so that he can begin maintaining Apple computers. Vondran said he would make sure the subject was brought up again at the next IRC Steering Committee meeting.

Cengiz Capan presented, for approval by the Council, several documents prepared by the General Access Lab Committee which had been distributed prior to the meeting; they are: 1) Charges and Responsibilities; 2) Accounting and Reporting Guidelines; 3) General Access Lab Planning and Budgeting Policies and Operational Procedures; and 4) General Access Computer Labs Policies. His subcommittee will continue to work on improving these documents and keeping them current. He reported that all of the general access labs are working very well at the present time. After some discussion, Carolyn Cunningham seconded the approval of the report

with a suggested change in wording, and the IRC voted to approve the documents prepared by the committee and take them to the IRC Steering Committee. Chairman Vondran asked that Capan's committee provide the University community with a list of the specialized software that is available in the general access labs, in addition to the basic offerings that are currently listed in their pamphlet.

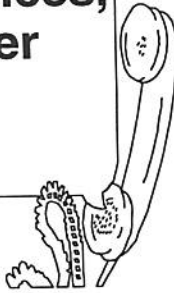
Chairman Vondran reported that the High Speed Network report had been presented to the IRC Steering Committee and was received favorably. The Steering Committee agreed that the project will be funded centrally. Vice President Diebel reported at that meeting that no negative communications had been received regarding the General Access Laboratories.

Joneel Harris reported that the new Voice Response System has been installed. The new system is not GTE equipment since GTE's bid on the open market requisition was too high. It was also noted that as soon as the Voice Response System is up and running, the Financial Aid system will be converted to it.

J. Harris also reported that the Task Force on the Degree Audit System has reviewed four different systems (2 mainframe-based and 2 PC-based). A decision has not yet been reached on which system to implement.

Tom Newell reported that the IRC Steering Committee has asked him to present the Voice Mail system to the IRC for its recommendations on 1) the usefulness of voice mail, and 2) the issue of central funding for campus-wide use of the system. Some departments are experimenting with it now; Telecommunications is providing the service as requested, and billing accordingly. Chairman Vondran appointed a sub-committee to study the proposal; and make a recommendation to the IRC. The committee is: Tom Newell, Chair; Chuck Fuller; Steve Miller; Bill Buntain; Sonny Butler (pending a reply); and Gerald Knezek (pending a reply). ■

Calls For Papers, Conferences, And Other Items of Interest



We have received the following "calls" and announcements from various organizations.

Call for Papers, Proposals

- *The Electronic Journal of Communication* — Papers for a special issue on Computer-Mediated Communication can be submitted for review until **September 15, 1992**. Submissions should be original, unpublished manuscripts or book reviews. For more information contact Tom Benson, Dept. of Speech Communication, Penn State University, 227 Sparks Building, University Park, PA 16802 Phone:

814-865-4201 (Internet) t3b@psuvm.psu.edu (BITNET) t3b@psuvm

- **Computers on Campus National Conference, November 15-18, 1992, Columbia Marriott, Columbia, South Carolina** — The Conference Planning and Review Committee is soliciting proposals from faculty and administrators involved with the effective utilization of computer resources in higher education. Proposals on topics in the following areas are suggested: Networking on Campus, Computers in Student Support, Instructional Uses, Computer Services, Academic Administration, Issues and Trends. Deadline for proposals is July 1, 1992. For more information contact Computers on Campus, University of South Carolina, Continuing Education, 900 Assembly Street, Suite 200, Columbia, SC 29208 Phone: 803-777-9444 or 803-777-2260 Fax: 803-777-9357.
- *Journal of Computing in Higher Education (JCHE)* — JCHE is an international journal dedicated to the publication of scholarly articles that contribute to our understanding of issues, problems, and research associated with information technologies and their application in education. Contact Carol B. MacKnight, JCHE Executive Director, Office of Instructional Technology, A115 Lederle Graduate Research Center, University of Massachusetts, Amherst, MA 01003 Phone: 413-545-4232 Fax: 413-545-3203 (Internet) jche@ucs.umass.edu

Conferences

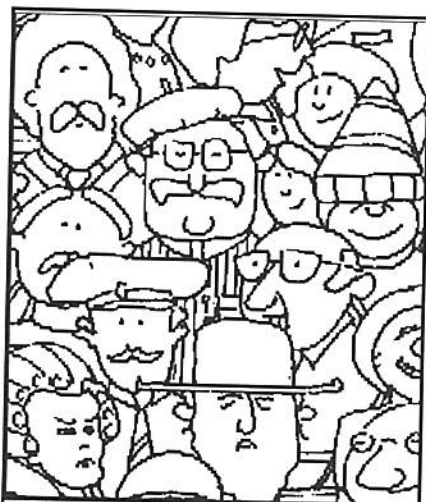
- **Fourth International Conference on Computers and Learning (ICCAL '92) Acadia University, Nova Scotia, Canada, June 17-20, 1992** — Invited speakers include Dr. H. Maurer from Austria, the creator of the Hyper-G hypermedia project; Dr. L. Moore from the University of North Carolina, the Co-Director of the acclaimed CALC three-semester calculus program; Dr. J. Murray, Director of the MIT Athena language learning project; Dr. B. Shneiderman, the head of the Human-Computer Interaction Laboratory at the University of Maryland; and Dr. B. Woolf, a leading expert on AI applications in education from the University of Massachusetts. For more information contact Dr. Ivan Tomek, ICCAL '92 chair, Jodrey School of Computer Science, Acadia University, Wolfville, Nova Scotia, Canada, B0P 1X0 Phone: 902-542-2201 ext. 467 Fax: 902-542-7224 (Internet) iccal@acadiau.ca
- **18th Annual Conference of the International Association for Social Science Information Service and Technology (IASSIST) at the Concourse Hotel, Madison, Wisconsin, May 26-29, 1992** — IASSIST brings together individuals engaged in the acquisition, processing, maintenance, and distribution of computer-readable text and numeric social science data. For more information contact Ilona Einowski, Data Archivist, UC Data, UC - Berkeley, 2538 Channing Way, Berkeley, CA 94720 Phone: 510-642-6571 (BITNET) CENSUS85@UCBCMSA ■

8040 Line-mode Access to be Discontinued

By Dr. Philip Baczewski, Acting Director of Academic Computing Services
(BITNET: AC12@UNTVM1)

8040 Line-mode access to the Academic mainframe system will officially be discontinued as of September 1, 1992. This service has been maintained primarily to support access to MUSIC/SP via the PCWS communications package. The age and nature of the communications hardware supporting line-mode access have made it impossible to continue its maintenance at a production level. (In fact, if the equipment should break before September 1, it may be necessary to discontinue service at that time if repair is not possible). Because there is no replacement hardware on hand and because newer communications technologies are being deployed on campus, it will no longer be possible to support line-mode access to MUSIC or to support the PCWS communications package.

Academic Computing Services recognizes that for some, this move will greatly affect their access method for mainframe computing, and in response we will offer customized training upon request, either individually or to small groups, on the Procomm, Kermit, or CUTCP communications packages. If you have any questions or comments concerning the discontinuing of line-mode access, please direct them to Dr. Philip Baczewski, Acting Director of Academic Computing Services, ISB 119, ext. 2324 (AC12@UNTMUSIC, AC12@UNTVM1, CC1:BACZEWSK). ■



BENCHMARKS FORUM

*BENCHMARKS FORUM is intended to serve as a vehicle for answering questions that may be of general interest to the user community. If you have a question, please send electronic mail to the **Benchmarks** editor (AS04@UNTVM1) or write it down and drop it by the Computing Center. We will try to answer it in the next issue.*

Question: Help! I've forgotten my password!

Answer: With the exception of a few classroom User-IDs, most User-IDs are issued in the owner's name. If you've forgotten your password, come by the Computing Center's reception area (ISB 119 — office hours are 8-5 Monday-Friday). The receptionist will give you a form to fill out and will check your UNT picture ID. When it is determined that the User-ID is yours, your password can then be confirmed or changed. For security purposes, telephone requests for password confirmation or change will not be honored.

You will need to see your instructor if the User-ID was issued in his or her name. The Computing Center cannot verify that the account is yours in that instance. ■

Computing Center Staff Activities

Academic Computing Services

Dr. Philip Baczewski, Acting Director of Academic Computing, presented a paper entitled "The Perception of a Two-Voice Musical Construct" on February 22 at the Society of Composer's Region VI conference. His composition, "Duet on Flute and Tuba" was also performed at the conference (on February 20) which took place at Texas Christian University in Fort Worth.

Billy Barron, VAX/UNIX Systems Manager had an article published recently in Internet Society News. His article "Internet Online Public Access Catalogs" appeared in the January 1992 issue (v.1 n.1).

Administrative Computing

Nancy Fisher, Voice Response Team Leader, was honored for her outstanding service to the University at the Chancellor's Sack Lunch on February 11. Congratulations Nancy! ■

Get Legal With the SPSS Amnesty Program

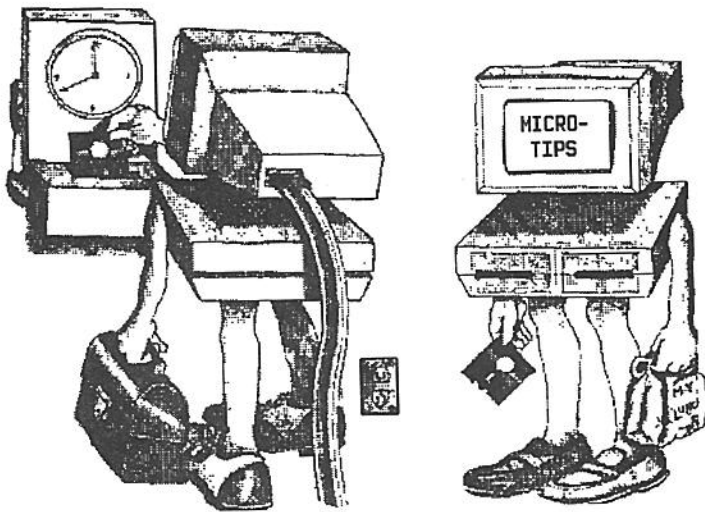
They know you're out there and they want to help. All SPSS/PC+ "software fugitives" — people who are using SPSS/PC+ illegally — can become recognized SPSS customers for as little as \$99 and without penalty. (NOTE: Full-time faculty and staff members at UNT, due to our site license agreement with SPSS Inc., can acquire SPSS/PC+ from the Computing Center. They can then use SPSS/PC+ at work and/or home as long as they are employed by the University. Teaching Fellows or Teaching Assistants can only use the package on University-owned PCs.)

You may have become a software fugitive unwittingly, by keeping a copy from an academic site-license after leaving school, or a friend's older version when the friend upgraded. Whatever the reason, for a short time only — until April 30 — you can become a licensed SPSS/PC+ user. Once you register with SPSS Inc., you will receive: new copies of SPSS/PC+ Base and Statistics (v. 4.0); product news; customer discounts; personal copies of SPSS newsletters; all other customer support and services

For more information about the SPSS Amnesty Program, call 800-543-6613 or write Amnesty Program, SPSS Inc., 444 N. Michigan Ave., Chicago, IL 60611. ■

Dial-up Line Problems

The Denton 2400 (565-3300) and 9600 (565-3461) baud lines are experiencing very high usage during the evening hours (approx. 7 to 11p.m. on Sunday through Thursday nights). We ask that you restrict your use of these dial-up lines to necessary computing work, and limit casual access to the host systems during the peak time periods. Additionally, you may wish to make note of these high-use time periods in order to schedule your work at off-peak periods, to take advantage of those times when access is more readily available. Even during the peak times, 1200 baud lines (565-3499) are available for use. The Computing Center is looking into solutions to allow more 2400 or 9600 baud access. ■



WordPerfect 5.1 Tab Settings



Virus Update

Michelangelo and other "timely" viruses

Please see VIRUS on page 17.

TABS continued from page 16.

Left one character	Left Arrow
Right one character	Right Arrow
Left one tab stop	Down Arrow
Right one tab stop	Up Arrow
To the left edge of screen	Home,Left Arrow
To the right edge of screen	Home,Right Arrow
To left edge of tab set line	Home,Home,Left Arrow
To right edge of tab set line	Home,Home,Right Arrow

Delete EOL - <Ctrl-END> — Deletes tab settings from the cursor location to the end of the 54.5" line.

Enter Number — To set a tab at a particular location, just type the inch in numbers with up to four decimal points. This method is particularly valuable when you are using proportional spacing. Be sure to begin any number less than 1" with a zero first, e.g. 0.5.

To enter multiple tab settings (set tabs at regular intervals), enter the position number for the first tab stop, followed by a comma, then by a number indicating the amount of space you want between tabs.

DEL — Move cursor to the location of the tab to be deleted, and press Delete.

Type (T) — The Type selection lets you determine whether tab settings are measured from the left edge of the page (Absolute), or from the left margin (Relative). When you select Absolute, tabs are measured from the left edge of the page regardless of your current margin settings. When you select Relative, tabs are measured relative to the left margin. The left margin setting is displayed as zero with negative numbers to the left of it, and positive numbers to the right.

Tab Stop Settings — Four types of tab settings are available. Each one aligns text differently.

Left	Text is left-aligned at the tab stop (Standard Tab)
Center	Text is centered over the tab setting.
Right	Text is right-aligned at tab stop (like Flush Right)
Decimal	Text is aligned at the align character (usually .)

For Example:

	Left Aligned
	Centered
Right Aligned	
	Decim.al
	Another.Decimal

Dot Leaders — A dot leader inserts a row of dots between the text and the next tab stop. To include a dot leader with any tab setting, move the cursor to the tab on the Tab Set menu, then type a period (.). When a tab setting has been set for a dot leader, the tab setting appears in reverse video.

Hard Tab — By pressing <Home> before <Tab>, Center (<Shift-F6>), Flush Right (<Alt-F6>, or Tab Align <Ctrl-F6>), you can change a tab setting for that time only without entering the Tab Set menu. Pressing Home twice before one of these keystrokes will insert a dot leader as well. You can insert hard tabs by using the keystrokes given below:

<Home>,<Tab>	Hard Left
<Home>,Center (<Shift-F6>)	Hard Center
<Home>.Flush Right (<Alt-F6>)	Hard Right
Tab Align (Ctrl-F6)	Hard Decimal Align ■

VIRUS continued from page 16.

the fall of the Alamo. What if it had been called the Santa Anna virus instead? Would the media have been interested?

Of course, if the virus had been named the McMahon virus in honor of the fact that March 6 is also Ed McMahon's birthday, the media would have probably still been interested. Especially if it printed out "Congratulations! Your computer may already be infected!" when you booted-up in the morning.

New MAC Viruses

Two Cornell students have been charged with computer tampering in the second degree for creating and distributing a Macintosh virus MBDF-A. It was embedded in versions of three computer games — Obnoxious Tetris, Tetracycle, and Ten Tile puzzle — and deposited into several computer archives in the U.S. and abroad, including SUMEX-AIM at Stanford University and archives at the University of Texas, and the University of Michigan. The games have been detected and removed from those archives, and disinfectant software has been modified to check for and eradicate the virus. You will need to get a copy of an anti-viral package that has been updated since February 20, 1992 to make sure you can locate and eradicate MBDF-A.

INIT 1984 is a virus that is designed to trigger if an infected system is booted on any Friday the 13th in 1991 or later years. Current versions of Gatekeeper and SAM Intercept are effective against this virus. ■

WordPerfect Users Group Schedule

Monthly meetings of the WordPerfect Users Group continue in Marquis Hall, Room 105. All meetings are from 2-3 p.m.

- **April 10:** Working with Tables
- **May 15:** Graphics How-Tos ■

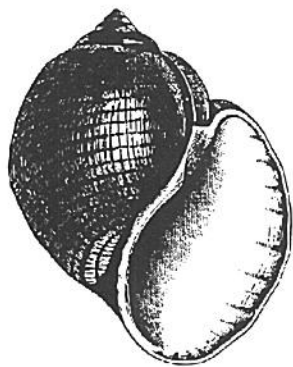
VAXCLUSTER USAGE STATISTICS

February Top Ten Programs: CPU Time Used

Program	Description	CPU Time	Percent of Total
1. User programs	Compiled Programs	5 20:37:12.35	28.2
2. GAUSSIAN	Molecular Modelling	5 00:08:56.81	24.1
3. DEFRAG	Disk Optimizer	2 02:57:33.06	10.2
4. NEWS	ANU News Utility	1 16:21:30.06	8.1
5. LISP	Lisp Interpreter	1 07:41:16.75	6.4
6. MOPAC	Quantum Mechanics	0 21:34:17.09	4.3
7. Kermit	File Transfer Utility	0 14:15:09.11	2.9
8. LOGINOUT	User Login	0 12:14:19.76	2.5
9. MAIL_SERVER	VMS Mail Server	0 10:18:11.96	2.1
10. BACKUP	Disk Backups	0 08:29:21.31	1.7
Total		20 18:58:57.15	

February Top Ten Programs: Frequency of Runs

Program	Description	Number of Runs	Percent of Total
1. LOGINOUT	User login	220415	34.3
2. SET	VMS Utility	132944	20.7
3. DIRECTORY	VMS Utility	49072	7.6
4. DELETE	VMS Utility	45411	7.1
5. User programs	Compiled Programs	29380	4.6
6. MAIL_SERVER	VMS Mail Server	20669	3.2
7. SYSLOGIN	User Login	18980	3.0
8. MAIL	VMS Mail Utility	15032	2.3
9. TYPE	VMS Utility	11006	1.7
10. SMTP	Internet Mail Utility	8880	1.4
Total		642593	



The UNIX Shell

By Marc St.-Gil, UNIX Systems
Programmer (mstgil@sol.acs.unt.edu)

I/O Redirection in the C Shell: csh

Hello! And welcome back to The UNIX Shell. In this month's column I am going to rediscuss I/O redirection in the C shell, csh. Next month, I will continue with examples from the Bourne shell, sh. Input/Output redirection is most often used to capture the output of a UNIX command that would normally print to your terminal screen. This can be very useful with programs that produce large quantities of output or when you want to save a copy of the output for later

perusal or perhaps to print. Most computer users have used a "pager" to scan a large file. A "pager" is a program that breaks up a file into screen-sized chunks as it prints out the file, allowing you to pause between pages. In UNIX this program is often named "more". If, for example, you had a large text file (named "myfile") that you wanted to view on your terminal screen, you could use the command `cat myfile` to view that file. Using the `cat` command however will simply output the file to your terminal screen as fast as UNIX can go. This is not often very useful since UNIX can generally `cat` faster than you can read. A more practical approach would be to use the command `more myfile`.

There are several different symbols to represent I/O redirection to a shell and they differ not only in the function represented, but also for different shells. For the duration of this column I will make examples showing C shell syntax. Next month, I will present the same examples for Bourne shell users.

Let's first consider the case where we want to capture the output of some program. For our first example, let's capture the output from the UNIX date command. The following command will put the current date and time information into a file called "curdate":

```
% date > curdate
% cat curdate
Mon May 27 11:48:21 CDT 1991
%
```

This example used the greater-than symbol (>) to indicate to the shell that output from the preceding command, date, should write output to a new file, curdate. A new file was created. If the file already existed and the shell variable 'noclobber' had been set, an error would have been reported and no changes would be made to the existing file. See the example below:

```
% cat curdate
Mon May 27 11:48:21 CDT 1991
% set noclobber
% date > curdate
```

```
curdate: File exists.
% cat curdate
Mon May 27 11:48:21 CDT 1991
%
```

As you can see above, redirecting the output of a command does not affect the error messages that command may generate. Redirecting error messages is also possible, by adding an ampersand (&) character after the greater-than (>) to make a >& symbol. The one thing you cannot easily do is send the output to one file and the error messages to another file or re-direct only the error messages. If you have a need to do this, you should use the Bourne shell, sh, instead of the C shell, csh.

For our next example, let's assume that we are working on a project and wish to keep track of the time spent on it. We could keep track of time spent by redirecting the output of the date command to a file. For example, we could create a file called "myfile". Then whenever we started working on the project we could send the output of a date command to our file and whenever we finish we could send the output of a date command to our file again. The new thing in this example is that we don't want to overwrite the current contents of the file because then we would lose our previous times for the project. What we need now is a way to append command output. The following command will append the output of the UNIX date command to our file "myfile":

```
% cat myfile
Fri May 24 11:12:51 CDT 1991
Mon May 27 11:48:21 CDT 1991
% date >> myfile
% cat myfile
Fri May 24 11:12:51 CDT 1991
Mon May 27 11:48:21 CDT 1991
Tue May 28 09:34:12 CDT 1991
%
```

This example used two greater-than symbols (>>) to indicate to the shell that output from the preceding command, date, should be appended to the

contents of the file named after the symbol, myfile. Again, if we want to send error messages to the file as well, we just add an ampersand, &, to the two greater-than symbols, like >&, and any error messages generated by the command will also be appended to the file specified. If the file didn't previously exist and the shell variable 'noclobber' had been set, an error would have been generated and no output would be generated. Note that in this case, using >& to redirect the error messages would be pointless and have no effect. See the example that follows:

```
% cat catdate
catdate: No such file or directory
% date >> catdate
catdate: No such file or directory
% date >>& catdate
catdate: No such file or directory
% cat catdate
catdate: No such file or directory
%
```

For the next example, let us assume that we want to see a sorted list of all the users currently on the system:

```
% who
```

SOLBOURNE USAGE STATISTICS

February Top Ten Programs: CPU Time Used

Program	Description	CPU Minutes	Percent of Total
1. g90	Gaussian 90	24831.3	46.2
2. plc	User Program	8033.6	14.9
3. wodson	User Program	5476.9	10.2
4. wod2d	User Program	4017.8	7.5
5. int	User Program	3102.4	5.8
6. sas	Statistical Package	1071.0	2.0
7. find	User Program	833.7	1.6
8. relayne	User Program	642.3	1.2
9. nntpd	USENET News		
	Xmit Daemon	449.0	0.8
10. dmserver	User Program	285.6	0.5
Total		48743.6	

February Top Ten Programs: Run Time Used

Program	Description	Number of Runs	Percent of Total
1. sh	Bourne Shell	124957	11.0
2. ls	Directory	69353	6.1
3. egrep	File Search Utility	45582	4.0
4. sort	File Sorting Utility	42456	3.7
5. tr	User Program	42322	3.7
6. tail	User Program	39419	3.5
7. expr	Expression Evaluator	39419	3.4
8. csh	C Shell	36128	3.2
9. rm	Delete File	36104	3.2
10. is_able	Permissions Checker	32451	2.8
Total		507266	

VAX/UNIX NEWS

UNIX News

- **Temporary storage crisis over for SAS users** — Since the new disk drives have now arrived, SAS will now no longer need to create a temporary working directory in your home directory. This means that large disk quotas will no longer be required to run SAS jobs. The SAS #WORK . . . directories will now be created in /scratch.
- **LPR printing problems** — We are having a problem handling large printing jobs off Sol. Please do not print a job larger than 500K from Sol the hp, hpps, or ISB queues. For some reason, these jobs cause time-outs and cause problems to our whole printing system. If you need to print large jobs, download the file to a PC and then print using Novell.
- **SAS on UNIX with a VT100** — We think we have finally hit on a method that fixes most/all of the problems with using SAS on UNIX with a VT100 emulator or terminal instead of an X terminal! If you have been inclined to use SAS on UNIX, but have been put off by the problems with using it from a VT100 terminal, please give it another try and let us (panu or mstgil) know how it's working for you. This applies to interactive SAS runs from PC users running Procomm, Kermit, and varieties of telnet (like CUTCP for PCs and NCSA for Macs). Thanks for your patience with this problem.■

```
mstgil tty01 May 27 14:56
darren tty0 May 27 15:01 (anto2.acs.unt.edu)
albert tty1 May 27 12:01 (sonne.cnns.unt.e)
darren tty2 May 27 15:12 (anto2.acs.unt.edu)
```

% who | sort

```
albert tty1 May 27 12:01 (sonne.cnns.unt.e)
darren tty0 May 27 15:01 (anto2.acs.unt.edu)
darren tty2 May 27 15:12 (anto2.acs.unt.edu)
mstgil tty01 May 27 14:56
%
```

This example used the vertical-bar symbol (|) commonly referred to as a "pipe." This form of I/O redirection is used to connect the output of the one program to the input of another program. Once more, appending an ampersand to the redirection symbol has the effect of sending any error messages along with the output.

A sequence of commands can be strung together using pipes and redirects. For example, if we wanted to save the output of the previous pipeline to a file, "myfile":

% who | sort myfile

% cat myfile

```
albert tty1 May 27 12:01 (sonne.cnns.unt.e)
darren tty0 May 27 15:01 (anto2.acs.unt.edu)
darren tty2 May 27 15:12 (anto2.acs.unt.edu)
mstgil tty01 May 27 14:56
%
```

For our last example, let us assume that we want to duplicate the "who | sort myfile" pipeline in the example above, but we don't want to use the pipe redirect.

% who > my.who.file

% sort < my.who.file > myfile

% cat myfile

```
albert tty1 May 27 12:01 (sonne.cnns.unt.e)
darren tty0 May 27 15:01 (anto2.acs.unt.edu)
darren tty2 May 27 15:12 (anto2.acs.unt.edu)
mstgil tty01 May 27 14:56
%
```

As you can see in the command `sort < my.who.file > myfile`, we have used a new redirect symbol. This is the less-than symbol (<) which is used to indicate to the shell that input for the preceding command, sort, should be taken from the following file, "my.who.file". This example is also illustrated using both the input and output redirects to affect a single command. ■

MAINFRAME TECHNICAL SERVICES

Mainframe Performance Statistics

Operating Systems Performance Statistics for February

CPU	SYSTEM	Planned Production Hours	Production Hours Achieved	System Uptime
ACAD	VM/XA	693.34	688.09	99.2%
ACAD	MUSIC/SP	673.84	668.19	99.2%
ACAD	MVS/JES2	692.52	683.96	98.8%
ACAD	COMPLETA	691.77	682.84	98.7%
ADMN	MVS/JES2	674.46	671.30	99.5%
ADMN	COMPLETA	273.00	272.22	99.7%
ADMN	ADABASA	645.70	641.64	99.4%

- The ACAD CPU achieved 99.5% uptime in February. The HDS/7360 DASD achieved 100% uptime in February. The HDS/7380 DASD achieved 100% uptime in February.
- The ADMN CPU achieved 100% uptime in February. The HDS/7360 DASD achieved 100% uptime in February. The HDS/7380 DASD achieved 100% uptime in February. The EMC Solid State Disk achieved 100% uptime in February. ■

February Top Ten Programs : Frequency Of Runs

Program	Description	#of Runs	% of Total
1. IEWL	Linkage Editor	12566	22.0
2. PGM=*.DD	Compiled Program	12454	21.8
3. IGYCRCTL	VS COBOL2 Compiler	11996	21.0
4. IEBGENER	IBM Utility	6789	11.9
5. SASLPA	SAS Version 5.18	3081	5.4
6. SPSS	SPSS Version 4.0	1533	2.7
7. CASMA001	Sort Utility	1398	2.5
8. IDCAMS	VSAM Utility	964	1.7
9. SPCHLCOB	COBOL2 Report Writer	891	1.6
10. IEFBR14	IBM Null Utility	811	1.4

February Top Ten Programs: CPU Seconds Used

Program	Description	CPU Seconds	% of Total
1. SASLPA	SAS Version 5.18	328394	66.3
2. PGM=*.DD	Compiled Program	76890	15.5
3. SPSS	SPSS Version 4.0	23264	4.7
4. IGYCRCTL	VS COBOL2 Compiler	20772	4.2
5. SAS370	SAS Version 6.06	11722	2.4
6. SSS4001	Operations Automation	7286	1.5
7. IEWL	Linkage Editor	6824	1.4
8. COMPLET4	Academic COM-LETE	6575	1.3
9. SPCHLCOB	COBOL2 Report Writer	2713	0.5
10. ISTINM01	VTAM Utility	1138	0.2

Key Causes Of Lost Productivity In February: ACAD CPU

MPU, Tape, and Disk Subsystems (HDS)

1. Aborted upgrade of microcode in 8083 MPU. 4.27 HOURS
2. Scheduled install of 7490 tape subsystem. 3.57

TOTAL 7.84 HOURS

Miscellaneous

1. VM/XA systems software maintenance. 3.00
1. MVS systems software maintenance. 1.66

TOTAL 4.66

GRAND TOTAL 12.50 HOURS

Key Causes Of Lost Productivity In February: ADMN CPU

MPU, Tape, and Disk Subsystems (HDS)

1. Scheduled install of 7490 tape subsystem. 2.68 HOURS

Miscellaneous

1. Scheduled software upgrade of MVS/JES2. 18.63 HOURS
2. MVS/SP systems software maintenance. 4.06
3. Scheduled microcode upgrade of NCR 3690 TCU. 1.27

TOTAL 23.96

GRAND TOTAL 26.64 HOURS ■

MAINFRAME TECHNICAL SERVICES

Disk Backup Schedules

SYSTEM	BACKUP	DESCRIPTION
Administrative MVS/SP	Daily	Monday - Friday around 7 p.m. (after COM-LETE is shut down) & on Saturday & Sunday if COM-LETE has been up that day.
	Weekly	Full pack dumps taken each Sunday morning.
	Monthly	Full pack dumps taken on the first day of each month.
Academic MVS/SP	Daily	Monday - Sunday during the early hours of the morning.
	Weekly	Full pack dumps taken each Sunday.
	Monthly	Full volume dumps taken on the first day of each month.
MUSIC/SP	Daily	Wednesday - Monday starting at 4 a.m. and lasting about 30 minutes.
	Weekly	Tuesday mornings at 3 a.m., these last about 2 hours.
	Semester	Once a semester, a permanent backup is taken.
VM/XA	VM Weekly	Early every Wednesday morning.
	CMS mini-disks	Daily backup performed early every morning. Weekly backup every Tuesday starting after Midnight.
	Semester	Once a semester, a permanent backup is taken.
VAXcluster	Daily	Incremental backups are performed Monday - Thursday at 6 p.m. Saturday & Sunday at 5 p.m.
	Weekly	Full backups are performed every Friday beginning at 8 a.m. Generally lasts all day.
	Monthly	A "stand alone" backup is performed monthly. Dates and times are given in the system log-on message.
	Semester	Once a semester, a permanent backup is taken.
Solbourne	Daily	Incremental backups are performed Sunday - Friday at 2 a.m.
	Weekly	Full backups are performed every Saturday at 3:30 p.m.
	Semester	Once a semester, a permanent backup is taken.



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